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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,169	09/27/2001	Gregory L. Ebert	42390P11907	5995

7590

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EXAMINER

SUAREZ, FELIX E

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,169

Applicant(s)

EBERT, GREGORY L.

Examiner

Felix E Suarez

Art Unit

2857



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-49 are rejected under 35 U.S.C. 102(e) as being unpatentable over Trans (U.S. Patent No. 6,377,640).

With respect to claims 1, 9, 21, 33, 38 and 44, Trans teaches a method (or a machine readable medium), comprising:

a) forming a product waveform by multiplying a positive signal waveform and negative signal waveform, said positive signal waveform and said negative

signal waveform being representative of a logical transition within a differential signal (see col. 42 line 33 to col. 43 line 26); and

b) determining the crossing (or highest or lowest) point voltage of said logical transition within said differential signal (see col. 44, lines 49-58) by calculating the square root of a maximum of said product waveform (see col. 35 line 63 to col. 36 line 4).

With respect to claims 2, 10, 16, 22 and 28, Trans further teaches comprising sampling said positive (see col. 34 line 58 to col. 35 line 12; see also col. 61, lines 43-56 and Figures 6D, 18, 24 and 27) and negative signal waveforms from an electronic circuit that transmits said differential signal (see col. 39, lines 9-19; see also col. 61, lines 43-56 and Figures 6D, 18, 24 and 27).

With respect to claims 3, 7, 8, 11, 13, 14, 17, 19, 20, 23, 25, 26, 29, 31, 32, 36, 37, 39, 40, 42, 43, 45, 46, 48 and 49, Trans further teaches said sampling is performed (or displaying) with an oscilloscope (see col. 56, lines 23-54).

With respect to claims 4, 12, 24, 18 and 30, Trans further teaches said electronic circuit further comprises a CMOS circuit (see col. 18, lines 38-50).

With respect to claims 5, 6 15, 27, 34, 35, 41 and 47, Trans further teaches said positive and negative signal waveforms have a 0.0 voltage

reference that is aligned with a low (or high) logic level of said positive and negative signal waveforms (see col. 61, lines 43-56 and Figures 18, 24 and 27).

Final Rejection

Response to Arguments

2. This action is responsive to papers filled 06/27/03.

3. Applicant's arguments filled 06/27/03 have been fully considered but they are not persuasive respect to claims 1-49. The Examiner has thoroughly reviewed applicant arguments, but believes the cited references to reasonably and properly meet the claimed limitations.

Applicants' primary argument is that *"It is apparent that none of these mathematical teachings describe a "square root of [a] maximum". Col. 44, lines 49 through 58 of Trans discuss a technique for characterizing Inter Symbol Interference (ISI) and zero crossing through analysis of frequency component magnitude and phase.*

Again, none of these mathematical teachings describe a "square root of [a] maximum". Col. 35, line 63 through Col. 36, line 4 of Trans mentions a "square root" pulse shaping filter but nowhere is a "square root of [a] maximum" described".

The invention is related to the measurements of signal waveform, generally; and has a practical application determining the crossing point within a logic transition of a differential signal.

Independent claims 1, 9, 21, 33, 38 and 44, claim calculating the square root of a maximum of a waveform.

First, the square root formula can be applied to any kind, or class of elements, to any range or categories; all that is necessary, is to have represented these properties by numbers or values.

Second, the values minimum, maximum, or to any level of a waveform can be represented by a number and in consequence the application of the square root at these numbers is only an application.

The Examiner considers that the Tran (U.S. Patent No. 6,377,640) system does an excellent application measuring waveforms magnitudes with the Component Object Model 2000TM (Com200TM), when in col. 31, lines 36-53 teaches:

"At any instance, the Com200TM Measurement system can measure the received signal's magnitude and phase. These values define the actual or measured phasor. The difference between the measured and the predefined reference phasors form the basis for the Error Vector Magnitude (EVM) measurements of the Com2000TM Measurement circuitry.

The Com2000TM EVM is defined by the average voltage level of all the symbols (a value close to the average signal level) or by the voltage of the outermost (highest voltage) four symbols.

The Com2000™ Measurement system measurements of error vector magnitude and related quantities can, when properly applied, provide great insight into the quality of the Synchronous Partial Response PAM digitally modulated signal. The Com2000™ Measurement system can also pinpoint the causes of any problems related to power and phase by identifying exactly the type of degradation present in a signal and even lead to the identification of the sources.”

And finally, defined values can be used to provide an optimum Square Root waveform or pulse shaping with the Com200™ (see Tran, col. 35, line 67 to col. 36 line 4). In these waveform or pulse shaping are included average signal level or outermost values.

The Examiner considers that the Com2000™ is capable to give an optimum Square Root for average signal level and for outermost waveform shaping values.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Silberberg [U.S. Patent No 4,006,413] describes a representative value of root-square-mean (RMS) voltage.

Trans et al. [U.S. Patent Application Publication No 2003/0016770] describes the signal's signature composed of both the waveform signal itself and the content of the waveforms.

Tran [U.S. Patent No 5,483,138] describes a RMS voltage values.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose telephone number is (703) 308-4926. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (703) 308-1677. The fax phone numbers for the organization where this application or proceeding is assigned

are (703) 308-7382 for regular communications and (703) 308-7382 for After
Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is
(703) 308-1782.

August 25, 2003

F.S.

